

REMARKS

Claims 1-5 are withdrawn. Claims 6, 10, 13, 14, 16, 17, 18 and 20 are amended. No new subject matter is added. Reconsideration and allowance of claims 6-20 is requested in light of the following remarks.

Specification

On page 8, the last line, "methof" is replaced with --method--.

For consistency with the claims, the written specification has been reviewed for places where the terms "bitline contact" and "storage node contact" appear. In those places, the terms are replaced with "bitline contact holes" and "storage node contact holes," respectively.

Claim Objections

Claim 8 is objected to. The applicants believe that the objection to claim 8 should be withdrawn, for the following reason.

Claim 8 recites that "*the portion of the first capping material* is approximately half the thickness of the first capping material" (emphasis added).

Claim 7, on which claim 8 depends, recites "etching the insulating film to a predetermined thickness so that *a portion of the first capping material* protrudes above the insulating film" (emphasis added).

Since claim 8 (the portion of the first capping material) properly refers to the subject matter previously introduced in claim 7 (a portion of the first capping material), and claim 7 contains no antecedent basis for the suggested revision of claim 8 to recite "the protruded portion of the first capping material" it is believed that the objection to claim 8 should be withdrawn.

The applicants note that "a protruded portion" as recited in claim 6 refers to "the bitline capping layer." The recited "first capping material" does not appear until claim 7.

Claim Rejections – 35 U.S.C. § 112

Claims 6, 10, 14, 16, 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In keeping with the proffered suggestion, claims 6 and 17 are amended to recite "bitline contact hole" rather than "bitline contact." Claim 16 is amended for consistency with claim 6. Claim 18 is amended for consistency with claim 17.

In keeping with the proffered suggestion, claim 17 is amended to recite "storage node contact hole" rather than "storage node contact." Claim 20 is amended for consistency with claim 17.

Regarding claim 10, it is amended to recite "depositing the first and second capping material comprises depositing a film." This amendment is fully supported by the original application at, e.g., page 7, lines 3-5.

Regarding claim 13, it is amended to recite "forming the insulating film" rather than "forming the insulating layer." This amendment is fully supported by the original application at, e.g., claim 6.

Regarding claim 14, the claim is amended to recite "etching the insulating layer" rather than "forming the bitline capping layer." This amendment is fully supported by the original application at, e.g., claims 7 and 13. Because claim 14 now more clearly refers to portions of the insulating layer that were introduced in claim 13, the uncertainty that was present when the claim recited "forming the bitline capping layer" has been removed.

Regarding claims 16 and 18, the claims are amended to recite that the order in which the bitline contact hole and the bitline pattern are formed may be alternated, rather than reversed. This amendment is fully supported by the original application at, e.g., page 9, lines 29-31. The applicants note that claims 6 and 17 allow for any order of formation of the bitline contact hole and the bitline pattern, including concurrent formation. Thus, amended claims 16 and 18 explicitly require that there is an order of formation, and whatever that order is, that it can be alternated.

Claim Rejections – 35 U.S.C. § 102

Claims 6-9, 11-12 and 16-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication 2003/0235948 to Park, et al. ("Park"). The applicants disagree.

35 U.S.C. 102(e) is explicitly limited to certain references "filed in the United States before the invention thereof by the applicant." MPEP 2136.03(I), emphasis in original. Foreign applications' filing dates that are claimed (via 35 U.S.C. 119(a)-(d), (f) or 365(a)) in applications, which have been published as U.S. or WIPO application publications or patented in the U.S., may not be used as 35 U.S.C. 102(e) dates for prior art purposes. MPEP

2136.03(I), emphasis in original. In contrast, applicant may be able to overcome the 35 U.S.C. 102(e) rejection by proving he or she is entitled to his or her own 35 U.S.C. 119 priority date which is earlier than the reference's U.S. filing date. MPEP 2136.03(I).

For purposes of 35 U.S.C. 102(e), the effective date of Park is Park's U.S. filing date, or January 13, 2003. MPEP 2136. Park's U.S. filing date may be antedated by applicant's earlier foreign priority application, which was filed in Korea on August 23, 2002, as long as the foreign application supports (in accordance with 35 U.S.C. 112, first paragraph) all claims of the U.S. application. MPEP 2136.05. Therefore, a translation of the certified copy of the foreign priority document is submitted with this paper in accordance with 37 CFR 1.55 and MPEP 201.15.

It is submitted that the rejection of claims 6-9, 11-12 and 16-20 under 35 U.S.C. 102(e) as being anticipated by Park should be withdrawn.

Claims 6-12, 17 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,281,073 to Lee ("Lee 073"). The applicants disagree.

Claim 6 is amended to recite "etching the insulation layer to form a bitline contact hole and a groove-shaped bitline pattern." This amendment is fully supported by the original application at, e.g., claim 6, FIG. 5E, which illustrates that a second inter insulation layer 340 is etched to form a groove-shaped bitline pattern 355, and FIG. 6B, which illustrates that the second inter insulation layer 340 is etched to form bitline contact holes 345.

Claim 6 is also amended to recite "forming a bitline that fills the bitline contact hole and that fills a portion of the bitline pattern." This amendment is fully supported by the original application at, e.g., claim 6, FIGs. 6B and 6D, which illustrate that a bitline 362 fills the bitline contact hole 345, and FIG. 5D, which illustrates that the bitline 362 fills a portion of the bitline pattern 355.

Thus, claim 6 explicitly states that the bitline pattern is formed by etching the insulation layer, and that the bitline fills a portion of the bitline pattern.

It is alleged that Lee 073 teaches a bitline 130. The applicants note that Lee FIG. 2E illustrates a second conductive film 130 (column 5, line 42), which is later patterned to form a bit line 130b, as illustrated in Lee 073 FIG. 2F (column 5, lines 54-56).

Contrary to the above features of claim 6, Lee 073's FIG. 2F shows that the bit line 130b does not fill a portion of the bitline pattern (that part of the alleged insulation layer 119 that is etched). Rather, the bit line 130 fills the entire bitline pattern.

Furthermore, claim 6 is amended to recite "forming a bitline capping layer on the bitline that fills a remaining portion of the bitline pattern and that has a protruded portion that extends above a surface of the insulating film, wherein the protruded portion is wider than the bitline." This amendment is fully supported by the original application at, e.g., claim 6 and FIG. 5G, which illustrates a bitline capping layer 369 that has a protruded portion that extends above a surface of the insulating film 340, wherein the protruded portion is wider than the bitline 362.

Contrary to the above features of claim 6, Lee 073's FIG. 2G illustrates that the alleged bitline capping layer (132b, 133a) does not fill a remaining portion of the bitline pattern, nor does it have a protruded portion that extends above a surface of the insulating film 119b.

Finally, claim 6 recites that the protruded portion is wider than the bit line. Thus, even if Lee 073's third insulation film pattern 132b (FIG. 2F; column 5, lines 58-59) could be said to be the protruded portion, it is evident that third insulation film pattern 132b is not wider than Lee 073's bitline 130b.

For all the reasons given above, Lee 073 fails to anticipate claim 6 because it does not show the identical invention in as complete detail as contained in the claim. MPEP 2131.

Claims 7-12 depend from claim 6, and inherently contain the features of claim 6. Consequently, Lee 073 fails to anticipate claims 7-12 at least because it does not show the identical invention in as complete detail as is contained in claim 6. MPEP 2131.

Claim 17 is amended to recite "etching the second insulation film to form a groove-shaped bitline pattern and a bitline contact hole that exposes the bitline contact pad." This amendment is fully supported by the original application at, e.g., claim 17, FIG. 5E, which illustrates that a second inter insulation layer 340 is etched to form a groove-shaped bitline pattern 355, and FIG. 6B, which illustrates that the second inter insulation layer 340 is etched to form bitline contact holes 345.

Claim 17 is also amended to recite "forming a bitline that fills a portion of the bitline pattern and that is connected with the bitline contact pad through the bitline contact hole." This amendment is fully supported by the original application at, e.g., claim 17, FIGs. 6B and 6D, which illustrate that a bitline 362 is connected with the bitline contact pad 330 through the bitline contact hole 345, and FIG. 5D, which illustrates that the bitline 362 fills a portion of the bitline pattern 355.

Thus, claim 17 explicitly recites that the bitline pattern is formed by etching the second insulation film, and that the bitline fills a portion of the bitline pattern.

It is alleged that Lee 073 teaches a bitline 130. The applicants note that Lee FIG. 2E illustrates a second conductive film 130 (column 5, line 42), which is later patterned to form a bit line 130b (FIG. 2F; column 5, lines 54-56).

Contrary to the above features of claim 6, Lee 073 shows that the bit line 130b does not fill a portion of the bitline pattern (FIG. 2F; that part of the alleged insulation layer 119 that is etched). Rather, the bit line 130 fills the entire bitline pattern.

Furthermore, claim 17 is amended to recite "forming a bitline capping layer on the bitline that fills a remaining portion of the bitline pattern and that has a protruded portion that extends above a surface of the second insulating film, wherein the protruded portion is wider than the bitline pattern." This amendment is fully supported by the original application at, e.g., claim 17 and FIG. 5G, which illustrates a bitline capping layer 369 that has a protruded portion that extends above a surface of the second insulating film 340, wherein the protruded portion is wider than the bitline 362.

Contrary to the above features of claim 17, Lee 073 illustrates that the alleged bitline capping layer (132b, 133a) does not fill a remaining portion of the bitline pattern, nor does it have a protruded portion that extends above a surface of the insulating film 119b (FIG. 2G).

Finally, claim 17 recites that the protruded portion is wider than the bit line. Thus, even if Lee 073's third insulation film pattern 132b (FIG. 2F; column 5, lines 58-59) could be said to be the protruded portion, it is evident that third insulation film pattern 132b is not wider than Lee 073's bitline 130b.

For all the reasons given above, Lee 073 fails to anticipate claim 17 because it does not show the identical invention in as complete detail as contained in the claim. MPEP 2131.

Claims 19-20 depend from claim 17, and inherently contain the features of claim 17. Consequently, Lee 073 fails to anticipate claims 19-20 at least because it does not show the identical invention in as complete detail as is contained in claim 17. MPEP 2131.

Claim Rejections – 35 U.S.C. § 103

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being obvious over Park in view of U.S. Patent Application Publication No. 2002/0115256 to Lee, et al. ("Lee 586"). The applicants disagree.

Park is not prior art under 35 U.S.C. 102(e), for the reasons explained above. Furthermore, for purposes of 35 U.S.C. 102(a) and 102(b), Park is prior art as of its publication date, which is December 25, 2003. MPEP 901.03. This application has a U.S.

filing date of August 6, 2003. Thus, Park does not constitute 102(a) or 102(b) prior art with respect to the present application.

The applicants submit that the rejection of claims 13-15 as being obvious over the Park/Lee combination should be withdrawn until it is established that Park constitutes prior art under 35 U.S.C. 102. MPEP 2141.01.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee 073 in view of Lee 586. The applicants disagree.


Claim 13 depends from claim 6. The Lee 073/Lee 586 combination is not alleged to establish *prima facie* obviousness for claim 6, nor does it. Consequently, the Lee 073/Lee 586 combination fails to establish *prima facie* obviousness for claim 13 because any claim that depends from a nonobvious independent claim is also nonobvious. MPEP 2143.03.

Conclusion

For the foregoing reasons, reconsideration and allowance of claims 6-20 is requested. Please telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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